

Title (en)
Lead-free glass compositions having a low melting point

Title (de)
Bleifreie Glaszusammensetzungen mit niedrigem Schmelzpunkt

Title (fr)
Compositions de verre exemptes de plomb présentant un bas point de fusion

Publication
EP 0895969 A1 19990210 (DE)

Application
EP 98114181 A 19980729

Priority
US 90895397 A 19970808

Abstract (en)
A novel glass composition comprises (by wt.) 45-67% Bi₂O₃, 24-39% SiO₂, 8-18% B₂O₃, 0-5% Al₂O₃, 0-4% TiO₂, 1-7% Na₂O, 0-3% K₂O, 0-3% Li₂O and 0-4% F<->. Preferably, the composition comprises 45-67 (especially 48-62)% Bi₂O₃, 24-34 (especially 25-33)% SiO₂, 8-13 (especially 8-12)% B₂O₃, 0-2 (especially 0.1-0.5)% Al₂O₃, 0-3 (especially 1-2)% TiO₂, 3-6 (especially 3.2-5.2)% Na₂O, 0-1.5 (especially 0.2-0.7)% K₂O, 0-1 (especially 0)% Li₂O and 0-2 (especially 0)% F<->. Also claimed is a glass frit produced from the above glass composition. Further claimed are (i) a glass enamel composition comprising the above glass frit together with an oxide pigment component and an organic vehicle; and (ii) a pore-free substrate, especially vehicle glass, with a fired-on coating of the above glass enamel composition.

Abstract (de)
Die Erfindung betrifft niedrig schmelzende bleifreie Glaszusammensetzungen, eine Glasfritte und sie enthaltende Emails zum Beschichten von Glas, wie Automobilglasscheiben. Die Glaszusammensetzung enthält und vorzugsweise besteht sie im wesentlichen aus (Gew.-%): 45-67 % Bi₂O₃, 24-39 % SiO₂, 8-18 % B₂O₃, 1-7 % Na₂O, 0-5 % Al₂O₃, 0-4 % TiO₂, 0-3 % K₂O, 0-3 % Li₂O, 0-4 F<-1>. Die Glaszusammensetzung weist eine hohe chemische Stabilität auf, vermeidet Spannungen in Glas und zeigt gute Anti-Klebe-Eigenschaften.

IPC 1-7
C03C 3/064; **C03C 8/14**; **C03C 17/04**

IPC 8 full level
C03C 3/064 (2006.01); **C03C 8/02** (2006.01); **C03C 8/14** (2006.01); **C03C 17/04** (2006.01)

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